Logic and magic in mainstream and fringe medicine

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Introduction

Qualified medical practitioners follow no fixed belief or system and are free to try any remedy, so mainstream is a better label than orthodox. And fringe is a crisp one syllable title, covering alternative, unconventional, complementary, natural and holistic, and is a name that its admirers were once happy to use[1]. So let's retain it.

There must be many reasons for the current boom in fringe medicine. One is clearly the desire for more attention, more time, more sympathetic understanding, more hope. Another is probably the increasing wish of many patients to be given causes and explanations, even where none is really known and where what is offered is pure speculation.

A third obvious reason, especially in serious illness, is a desperate desire to try something different - anything - often accompanied these days with a longing to feel 'in control', rather than just accepting what has happened and hoping for the best (this latter attitude to misfortune now being rather despised, though it used to be admired).

Finally, I suggest that fringe medicine appeals to that side of our nature that dislikes logic and prefers magic - a basic instinct that may be seeking other outlets following a decline in religious observance.

Logic or magic?

By logic I just mean logical reasoning. Semantic confusion has been caused by labelling as 'rational' or (logical) only those remedies whose mechanism we understand - or think we do - regardless of evidence of effectiveness. But which is more rational? To follow theory or results? We need a word other than 'rational' for treatments that we merely think *ought* to work - according to laboratory experiment or armchair reasoning. Evidence for effectiveness and evidence to support the relevance of some suggested explanatory theory are two different things. They should be kept separate.

Logic looks at all available evidence and considers all possibilities; not just those based on personal conviction, authority or wishful thinking. From the logical side of our nature also comes the urge to question all things, search for clues, sift evidence, get at the truth and tackle challenges, whether intellectual or practical. None of this is much to the liking of fringe medicine - which, consequently, unlike mainstream medicine, makes little or no progress and solves no basic problems. Plenty of grateful patients, yes - but not enough insight or honesty to see the most likely reason for this. Very little convincing testing of remedies; very little self criticism, or learning from mistakes; and too many sweeping all embracing theories, usually contradicting each other and based on belief without adequate supporting evidence.

By magic I am thinking partly of good magic, partly of bad. An example of the first is the way in which some doctors, nurses and fringe practitioners can quickly restore morale, giving immediate hope and peace of mind to those in distress. If that's not magic, it sometimes seems like it. There may well be unknown factors here.

As for bad magic I am thinking mainly of anti-rational attitudes - harmless when confined to astrology or palmistry, but now disturbingly on the increase in the health field. For example, the perverse idea that human life was healthier when it was more natural and less civilized - ignoring the fact that millions of us now enjoy a safer life, a better quality life, and a longer life than did those who came before us. Or the equally strange belief that a healthy mind protects us, not just from some ills, but from all (does this apply to other primates, too?). Or the idea that until medicine cures everything (not merely far more things than ever before) it has failed.

Along with this come all kinds of bizarre theories, diets and rituals, sometimes mixed with pseudo-scientific jargon, sometimes with a smattering of the occult and paranormal. Mystery - instead of being a challenge to puzzle over (or just to marvel at) - is answered by myth. All this is popular with one side of our nature. Lack of good evidence adds to the magic. Don't forget that a certain amount of madness and magic are in our blood. Quite recently in our history (since Shakespeare wrote his plays) hundreds of women were officially designated by both church and state as witches - and burnt[2].

Lack of logic in mainstream medicine

However, let's also look at mainstream medicine. When it comes to logic, how well do we score? For inconspicuous logic and a longing for magic there is perhaps not a lot to choose between the typical claims of so much fringe medicine ('homeopathy can be successful in all diseases'[3]) and the remarkable official aim of the World Health Organization ('Health for all by the year 2,000'[4]). And do we, too, not still indulge sometimes in wasteful mumbo jumbo and magic? What about all those almost needless or low priority scans and tests, which impress the patient and symbolize the wonders of modern technology, but which we know are very unlikely to alter outcome[5]? Do such tests not sometimes soak up much badly needed money and resources?

As for logic, perhaps these days mainstream medicine is two parts logic and one part magic, whereas not so long ago it was the other way round. Examples of lack of simple logic are still common. For example, in my own field - cancer - there are still some who think that if earlier diagnosis is followed by longer survival (longer from the date of diagnosis)

this must mean that treatment is prolonging life. Or that if one kind of cancer shows 60% 5 year survival after treatment and another kind only 15% this shows that the first treatment is doing more good than the second. In both cases it may be so, but we need more evidence. Evidence of the kind just given is by itself worthless, containing not even a probability that what is claimed is true.

Another example of simple logic that we cannot duck, however unpalatable, is that no matter how good the evidence that treatment A gets a better result than treatment B, one possible reason for this is that treatment A is useless and that treatment B is doing harm. To sort this out, further evidence is needed. Similarly, you don't need any training in statistical analysis to appreciate that new and more accurate methods of finding out how far a cancer has spread (which will put many patients into a more advanced stage) will appear to improve the results in each stage, even if nobody is any better off.

Again, whether we are looking at mainstream or fringe medicine, honest thinking is all we need to face up to the fact that if an assortment of widely different treatments (or the same drug at widely different doses, or surgery that varies greatly in its scope and thoroughness) all give broadly the same result, then the most likely possibility - or at least one that must be taken seriously - is that all are ineffective. Logic can be painful when it collides with wishful thinking, but is vital if we are to get our priorities right.

Perhaps the most interesting - and humbling - thing about these five examples is that to appreciate their validity requires no scientific or statistical training whatever. Nor do any of them depend on any advances made in the last 100 years. All could have been appreciated by anyone thinking clearly 200 years ago or more.

Comparing results

How are we to assess outcome? The public, the media and even some professionals seem to have little idea of how difficult it can be to know whether or not a treatment is effective - and, if so, how effective. The history of medicine shows that it is quite possible for a remedy that is actually doing harm - never mind not doing any good - to be thought of (by both doctors and patients) as effective. One example is blood letting, a popular treatment for hundreds of years - and it was popular for far more conditions than those few (high blood pressure and so on) for which it could possibly have been of real benefit. Another is traditional remedies applied to cuts and abrasions, probably infecting them and delayed healing - but the pus that appeared was thought to have been 'successfully brought to the surface'.

Quite apart from our old friend the placebo effect[6], three factors stand out. First, many disorders are self limiting. Second, in many chronic conditions spontaneous remissions are common - the last remedy to be used getting the credit. Third, unwarranted assumptions are common, such as the belief that without the treatment symptoms would have persisted or got worse (or that death would have occurred) when, in fact, the usual thing - the normal thing - in most diseases (including cancer) is for a few patients to do, not just better than expected, but far better than expected. In medicine, unexplained miracles are as normal as unaccountable disappointments.

An important factor here is that most of us, whether practitioners or patients, want to believe that it was the remedy that did the trick. This is partly to feel in control, but also - in the case of fringe medicine - to please the side of our nature that craves for magic. Response to a fringe remedy is exciting. Response to a mainstream remedy is merely satisfactory. Spontaneous recovery, on the other hand, is frankly boring. Nothing to be enthusiastic about, nothing to recommend to friends. For this reason supporters of natural healing usually take good care to add some remedy or other to the work of nature. They don't want nature to get all the credit.

To get at the truth we nearly always need to make a valid comparison of some kind, both groups being alike apart from how they are treated[7]. Whatever the statistical complexities where small differences are concerned - and whatever the practical and emotional problems - you would think that this basic principle of reliable comparison would have been obvious to thoughtful men and women for centuries. Yet until quite recently hardly anybody saw the need for it - further testimony to the faltering, inconstant, reasoning powers of homo 'sapiens'.

Two kinds of comparison

Having decided what to compare (treatment versus no treatment, drastic treatment versus gentle, new drug versus placebo, one policy versus another policy, and so on) we can then either - in the style of research - look at just one aspect; or - in a very practical way - we can compare all the advantages and disadvantages of two policies[8,9]. Ideally, we should do this not just with every new treatment, whether mainstream or fringe, but with every new technique or investigation.

To compare from the start may well rob many doctors of the chance to publish 'encouraging' preliminary results[9-11]. To the public, however, testing new remedies in this way probably makes far more sense than comparing established ones. Inexperience with a new remedy does not affect the need to compare. Dosage and so on can be adjusted later. It is illogical to suggest that to randomize a pilot trial is unethical. Those who get the new treatment at this stage may later be either glad or sorry. Exactly the same applies to those who don't get it.

The day will probably come - provided we don't slip back into a new dark age - when randomized pilot trials will be standard practice and it will amaze historians that we failed to do them. Anything less will be considered by the public, as well as by the profession, to be both irrational and unethical. This will protect thousands of patients from having treatments for many years that are later recognized to have been second best or needlessly drastic.

Fringe practitioners and others sometimes claim that for them such comparisons are not valid because of variations in treatment to suit the individual. But this statement, though frequently made, does not hold water. No matter how complex and variable what is done (or how often it is modified for each person, or what criteria of success or failure are chosen) how can all benefit, if truly present, suddenly become invisible as a result of a formal comparison being made?

Indeed, there is no reason why a policy of constantly varying the treatment should not be compared with a more standardized policy, the latter probably having the advantage for the patient of being easier, less time

consuming and perhaps safer (because everyone in the treating team is familiar with a standard procedure). Such advantages may or may not be outweighed by disadvantages. We need to find out.

Alternatively, whether in mainstream or fringe medicine, one particular aspect of a policy can be looked at to see if it is doing good, or harm, or neither. Some years ago some of us unsuccessfully suggested to those practising fringe medicine at the Bristol Cancer Help Centre that to find out whether or not their very exacting and controversial diet was really helping patients, they could make their own comparison. Some of their patients would take a normal healthy well balanced diet, others the special clinic diet. In every other way they would all get whatever was normally recommended. In particular, all would get the special individualized psychological support and friendly interest for which the clinic is well known. Then the truth would emerge, just as it would in any situation where we wish to test the true value of something complementary or adjuvant.

One of the problems of making formal comparisons, if we are honest, is having to express frank doubts to patients who long for paternalistic certainties. Either we accept this as an overriding objection; or we decide that the ethical balance tips firmly the other way and that we ought to be doing far more to persuade the media and the public of the need for such trials.

Just the disease? or the whole patient?

How important is it to consider the whole patient? Holistic medicine now has an almost mystical sound about it. Perhaps sometimes 'whole' and 'holy' get a bit mixed up, but this question is also largely a matter of simple logic and common sense, with little need for grandiose philosophical, mystical or ethical concepts. People vary. They have different needs and life styles, different problems, different fears, different perceptions. You don't need any fancy jargon to prop up the obvious fact that doctors - like anyone else aiming to help those who seek their help - will have a higher success rate if they consider the whole person, rather than doing the same thing for all those who at first sight have the same problem.

Though fringe medicine would love to think otherwise, holism - if that is what we are now to call it - is a long standing and fundamental tenet of mainstream medicine. True, neither Lister nor Osler, pillars of the medical establishment 100 years ago, ever said that in an ongoing situation it is mandatory to empathize with the personality characteristics of the individual client. However, Lister said that there is only one rule of good medical practice, put yourself in the patient's place. And Osler said that what matters is not what sort of disease the patient has, but what sort of patient has the disease. Which comes to much the same thing.

At the same time we must have sensible priorities. Something is wrong if other patients, perhaps anxious or ill or in pain, are kept waiting while nearly all those being seen - rather than just those where it is important - are flattered (or perhaps irritated) by detailed questions about their personal life. The increase in lengthy low priority chat and documentation of this kind is one of the reasons for accelerating health costs. True, every patient deserves at least a brief word or two about something other than her medical problem - partly to be friendly, partly as a mark of respect, partly as an antidote to fear. However, detailed exploration of social and emotional problems, though sometimes badly needed, can be indulgent and wasteful.

Finally, when a patient is in a situation for which logic and reason have not yet discovered any treatment that alters the course of the disease, can Mainstreamers give as much comfort as Fringe Magicians? Can they compete? Can they make up for the fact that for them it goes against the grain to think up weird and wonderful theories, which at one swoop can provide a cause, an acceptable label, and complex ritual therapy? Can they be equally positive and encouraging, yet remain honest? Can they make similar good use, without overdoing it, of the powerful therapeutic weapon of suggestion? It's not easy, but - given equal concern for the patient and equal charisma - I think they can. Above all, they can if they show sincere, warm, friendly interest - in the patient as a person; in his symptoms; and in his problems, his hopes and his fears. Mainstreamers also have the big advantage of being better trained, especially in the differential diagnosis of symptoms. This can give the patient greater peace of mind through feeling safer in the hands of a fully trained doctor.

Whatever happens in fringe medicine, at least in mainstream medicine let's continue to aim for a kind heart combined with a keen intellect - and not sacrifice either to current fads or slogans.

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